

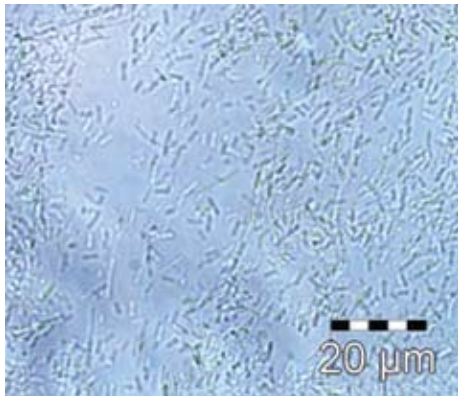
Disrupt cells and create nanoemulsions or nanosuspensions while using less of your expensive ingredients and materials

The revolutionary LV1 Microfluidizer benchtop processor is ideal for:

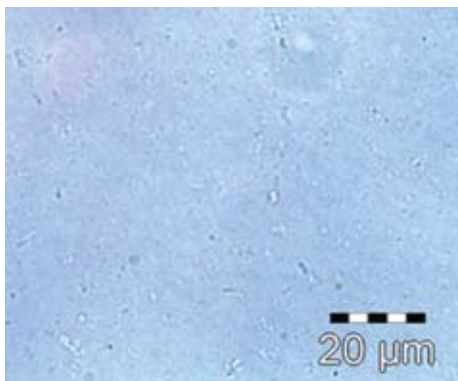
- Cell Disruption (E. coli, yeast, etc.)
- Production of stable nanoemulsions
- Nanoencapsulation in polymers, liposomes and oils
- Deagglomeration

The LV1 has been designed to achieve operating pressures up to 2069 bar (30,000 psi) for samples ranging from 1–6 ml.

Its unique fixed-geometry interaction chamber, the heart of every Microfluidizer processor, ensures consistency and scalability in cell disruption and high shear fluid processing.



E.coli - before



E.coli - after



Model shown is subject to change depending on options selected

LV1 Microfluidizer® High Shear Fluid Processor

The LV1 benchtop was developed due to customer demand for the ability to bring Microfluidizer-quality high shear fluid processing to the milliliter scale. This allows universities, research teams, biopharma companies and others to benefit from uniform high shear processing while using less of their expensive ingredients and materials.

- Operator controlled sample size: 1 ml to 6 ml per actuation
- Achieve processing pressures up to 2069 bar (30,000 psi)
- Syringe feed vessels
- Ceramic interaction chamber
- Powered by a 110VAC or 220VAC /50 or 60 Hz single phase electrical motor
- Fits in standard laboratory chemical hood
- CE compliant

Utilizing Microfluidics' fixed-geometry interaction chamber technology, the LV1 is capable of processing a wide variety of fluids such as oil-in-water emulsions, solids-in-liquid suspensions, and cells, including the most difficult yeasts and plant cells, in as few as 1–2 passes. What's more, the process is repeatable and is guaranteed to scale up to pilot and/or production volumes.

Processing Made Easy

The LV1 Microfluidizer processor contains an on-board .39 kw (.5 hp) electric-hydraulic module that powers a single acting intensifier pump. Process pressures may be adjusted from 138-2068 bar (2,000-30,000 psi) to produce the desired product results.

Product is drawn into the LV1 liquid end by a manually controlled charge stroke.

As the manually controlled intensifier pump travels through its pressure stroke, it drives the product at constant pressure through the interaction chamber. Within the chamber are specially designed fixed-geometry micro-channels through which the product stream will accelerate to high velocities. This creates the high-shear and impact forces that bring about the desired results as the high velocity product stream impinges on itself and/or on wear-resistant surfaces.

Upon exiting the interaction chamber, the product flows through an submerged coiling coil (optional) which regulates the product to a desired temperature. At this point the product may be passed through the system for further processing moved on or to the next step in the process.

Microfluidics reserves the right to change specifications without notice.



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Advantages

Uniform Particle Size Reduction	Cell Disruption
Smaller particle sizes than homogenizers	More uniform shear than sonicators
Narrowest size distribution	Improved yield
More stable emulsions	Ruptures challenging cells
Scaleup guaranteed	
Quiet operation	
Media and chemical-free processing	
Short process cycles	
Low or no heating	
Fewer passes	

Preliminary LV1 Specifications

Description	Low volume high shear fluid processor
Shear Rate @ 2069 bar (30,000 psi)	12.25 million sec ⁻¹
Minimum Sample Size	1 ml to 6 ml per stroke
Stroke Frequency	up to 2 per minute (user dependant)
Product Temperature Limit	73°C (165°F)
Power Requirements	110 VAC / 50 or 60 Hz / 10 amps 220 VAC / 50 or 60 Hz / 5 amps single phase electric outlet
Dimensions W x D x H	51cm x 65cm x 60.2cm (20" x 25.8" x 23.7")
Weight	109 kg (240 lbs)
Cleaning	Flush to clean (no disassembly required)
Sterilizing	Autoclavable (disassembly required)

Standard Features

Interaction Chamber Material	Ceramic
Enclosure	Stainless Steel
Drive Method	Electric/Hydraulic
Product Cooling	Emersed coil in ice bath tray (optional)
Feed Reservoir	10 ml syringe type
Collector Reservoir	10 ml syringe type
Warranty	1 Year (standard M-5)

Options

- Product Cooling Coil and Tray
- Syringes 1 ml to 6 ml